

1 1. A downlink beam frame signal processing
2 system for a communication satellite, the processing
3 system comprising:

7 a power amplifier for amplifying a waveform based
8 in part on the uplink data for transmission; and

1 2. The processing system of claim 1, wherein
2 the power gating signal is indicative of
3 unavailability of uplink data in the memory.

1 12. The method of claim 10, wherein power gating
2 comprises power gating at least a payload of the frame
3 signal in response to too little uplink data in the

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4 memory to fill the payload in the frame signal beyond
5 a predetermined threshold.

1 13. The method of claim 10, wherein power gating
2 comprises power gating at least a payload of the frame
3 signal in response to too little uplink data in the
4 memory to completely fill at least two payload fields
5 in the frame signal.

1 14. The method of claim 10, wherein power gating
2 comprises power gating at least a payload of the frame
3 signal in response to satellite power requirements.

1 15. The method of claim 14, wherein power gating
2 comprises power gating at least a payload of the frame
3 signal in response to satellite eclipse power
4 requirements.

1 16. The method of claim 10, wherein power gating
2 comprises power gating at least a payload of the frame
3 signal in response to a statistical multiplexed
4 estimate of downlink utilization.

1 17. The processing system of claim 10, wherein
2 power gating further comprises maintaining at least
3 one synchronization field in the frame signal.

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4 a packet switch routing self addressed uplink
5 data to a memory, the memory comprising at least first
6 and a second downlink beam hop location storage; and

1 19. The processing system of claim 18, further
2 comprising a filter coupled to a modulator output
3 carrying the waveform.

1 20. The processing system of claim 19, wherein
2 the waveform has frequency content removed in a
3 passband region of the filter in response to the power
4 gating signal.

22. The processing system of claim 21, wherein a second payload section of the waveform has frequency content remove in the passband region of the filter in response to the power gating signal.